

ments. The embryonic cells, on the contrary, multiply by division, to form a cellular zone of increasing extent, which finally, under the form of a cellular vesicle, will enclose the central mass of nutritive matter. From that time the blastoderm is formed.

It results from this that the large cell, which M. Gerbe has regarded as representing the body producing the vitellus, is really the entire egg,—that the egg of the *Sacculinæ* cannot be compared to the egg of birds, since it is impossible to distinguish in it any parts corresponding to the yolk and the cicatricula,—that the polar cell, which has been considered to represent the germ, is analogous to the protoplasmic cord of the egg of the *Anchorellæ*,—and that this cell separates from the mature egg, and remains in the ovary to become divided there and give origin to new eggs.

It is very evident, also, that no comparison can be established between the vitelline body of the eggs of some spiders, or of certain Myriopods, and the cell-nuclei of the double egg of the *Sacculinæ*. The vitelline body of the egg of the spiders, of which MM. von Wittich, von Siebold, and V. Carus have studied the constitution and the mode of formation, and of which M. Balbiani has proved the existence in the Myriopods, never presents the characters of a vesicle or of a cell-nucleus. This body, far from being general in all the animal series, does not exist in all the Araneida, nor even constantly in the same species of Myriopod, such as *Geophilus simplex*: the signification of this accidental element of the egg remains still to be determined.—*Comptes Rendus*, tome lxxix. November 29, 1869, pp. 1146–1151.

Food of Oceanic Animals.

Dr. Wallich complains that I omitted to notice what he had published on the subject. I must confess that I overlooked it.

In his 'North-Atlantic Sea-bed' (p. 131), he says that it may be asked "under what other conditions than exceptional ones can marine animal life be maintained without the previous manifestation of vegetable life, as must be the case if it exists at extreme depths?" and he answers this inquiry by submitting that "in the majority of the marine Protozoa, as, for instance, in the Foraminifera, Polycystina, Acanthometræ, Thalassicollidæ, and Spongidæ, the proof of these organisms being endowed with a power to convert inorganic elements for their own nutrition rests on the undisputed power which they possess of separating carbonate of lime or silica from waters holding these substances in solution." But surely this is not a satisfactory answer to the inquiry. A limpet separates carbonate of lime from sea-water; but it cannot be assumed that this animal (which is well known to be a vegetable-eater) has also the power of converting other inorganic substances for its own nutrition. Foraminifera, as well as Amœbæ, are usually considered animal-eaters, feeding by means of their pseudopodia or expansions of the sarcode. As regards sponges, we find, from Dr. Bowerbank's Monograph (vol. i. p. 122), that, in the greater number, their nutri-

ment "is probably molecules of both animal and vegetable bodies, either living or derived from decomposition," and that "the fecal matters discharged by the oscula exhibit all the characteristics of having undergone a complete digestion."

If it be any satisfaction to Dr. Wallich, I assure him that my estimate of his memoir on the North-Atlantic Sea-bed remains unchanged. It is only to be regretted that the work is incomplete.

J. GWYN JEFFREYS.

22 January, 1870.

Note on the Habits of the Discophora.

By the Rev. THOMAS HINCKS, B.A.

In the Number of the 'Annals' for October last, Dr. Gray reports an interesting observation on the habits of certain Medusæ, which had been communicated to him by Mr. M'Andrew. This gentleman had informed him that he had often seen the sea-jellies (*Medusa æquorea*, Forskål) "lying on their backs at the bottom of the beautiful clear water of the Red Sea, with the tentacles expanded like a flower." Dr. Gray adds that he is not aware that this habit has been observed or recorded before.

My object in writing is to point out that the same thing was noticed long ago by Mertens. He states (as quoted by Agassiz) that he had constantly found Medusæ (*Polyclonia Mertensii*) in the lagoons of Ualan, "with their arms spread and turned upward, resting upon the ground." As Agassiz adds that he himself had always seen the members of this genus "in the reverse position, the arms downward," Mr. M'Andrew's testimony in support of the elder naturalist has a positive value. Probably when at rest the free zooids of the *Discophora* generally may assume the position described by Mertens, or at any rate those which are accustomed to seek their food at the bottom of the sea.

Agassiz has studied another species (*Polyclonia frondosa*) on the Florida reefs, and states that it has the curious habit "of groping in the coral mud at the bottom of the water, where thousands upon thousands may be seen crowded together, almost as closely as they can be packed upon the bottom, at a depth of from six to ten feet. When disturbed, they do not rise, but crawl about like creeping animals, now and then only flapping their umbrella."

Note on the Occurrence of two Species of Crustacea not hitherto observed in Scotland. By M. WARSON, M.D.

When dredging, in the month of September, last year, along with some friends, off the north coast of the island of Mull, I had the good fortune to procure two species of Crustacea which, so far as I can ascertain, have not before been obtained on any part of the Scottish coast, although they would appear to be not uncommon on some parts of that of England. These are the angular crab (*Gonoplax angulata*) and the four-horned pea-crab (*Pisa tetraodon*) of Bell.

The former was taken in Bloody Bay, at a depth of about twenty-